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Idaho Basin Outlook Report February 1, 1993

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How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Soil Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

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IDAHO WATER SUPPLY OUTLOOK REPORT

FEBRUARY 1, 1993

SUMMARY

A series of heavy storms hit Idaho's central mountains in late January, ending an otherwise dry period that began early in the month. The central mountains and southwestern Idaho watersheds received normal snowfall for the month; the rest of the state had well below normal amounts. Currently, snowpacks are above average along the southern edge of the state, near average in the central mountains and the Bear River area, and slightly below average in northern Idaho and the upper Snake River basin in Wyoming. Current streamflow forecasts call for below normal runoff throughout most of the state, except for basins in southwestern Idaho where above normal flows are expected. Reservoir storage is essentially nonexistent in southern Idaho, leaving us almost totally dependent upon the mountain snowpack for next season's water supply. Current conditions are encouraging, but two more months of good snowfall are needed before we can count on adequate water supplies this spring and summer.

SNOWPACK

January snowfall was near average in central and southern Idaho, but well below average in northern Idaho and the upper Snake basin. Currently, snowpacks range from 130 to 170% of normal along the southern edge of the state, from 95 to 120% in the central mountains, and from 70 to 100% in northern Idaho and the upper Snake River basin in Wyoming. The Bear River area of southeastern Idaho reports near average snowpack conditions. Low elevation snowpacks are still well above average -- a result of heavy early season snowfall in lower elevations, followed by cold temperatures. With over half of the snow season behind us, these figures are encouraging for southern Idaho watersheds. Normal snowfall is needed during the next two months, however, to maintain this promising outlook.

PRECIPITATION

With the exception of the central and southwestern mountains, Idaho's precipitation was below normal during January. The driest areas were the Panhandle and Clearwater River basins, where SNOTEL sites reported less than 65% of normal precipitation during January. On a brighter note, precipitation was above normal in the Wood and Lost River basins, and near normal in the Weiser, Payette, and Boise basins and watersheds south of the Snake River. Temperatures at National Weather Service (NWS) observing sites around the state were well below normal for January. Lewiston reported the coldest January in 14 years, with a deviation of 6.6 degrees below normal. Pocatello was 5.2 degrees below normal for the month, and Boise reported 4.2 degrees below normal. The NWS 30-day outlook for February calls for slightly below normal precipitation and slightly above normal temperatures, with the 90-day outlook continuing this trend.

RESERVOIRS

Idaho reservoir storage is the bleak spot in an otherwise favorable report for 1993. Many reservoirs in southern Idaho are nearly empty for the first time since their construction. Almost all reservoirs south of the Clearwater basin are reporting less than half of their normal storage for this time of year. As a result, there is very little water supply "insurance", and Idaho water users will be almost totally dependent upon the mountain snowpack and resultant runoff for water supplies this year. Fortunately, streamflow prospects for 1993 call for some of the best flows in the last six years. Unless the next two months are very wet, however, runoff may just meet demands in many basins, leaving very little carryover storage at the end of the 1993 irrigation season. It will take several years of normal or better runoff to diminish the effects of the recent drought and allow for some reservoir reserve at the end of the irrigation season.

Note: SCS reports reservoir information in terms of usable contents, which includes both active and inactive storage. Other operators may report reservoir contents in different terms.

STREAMFLOW

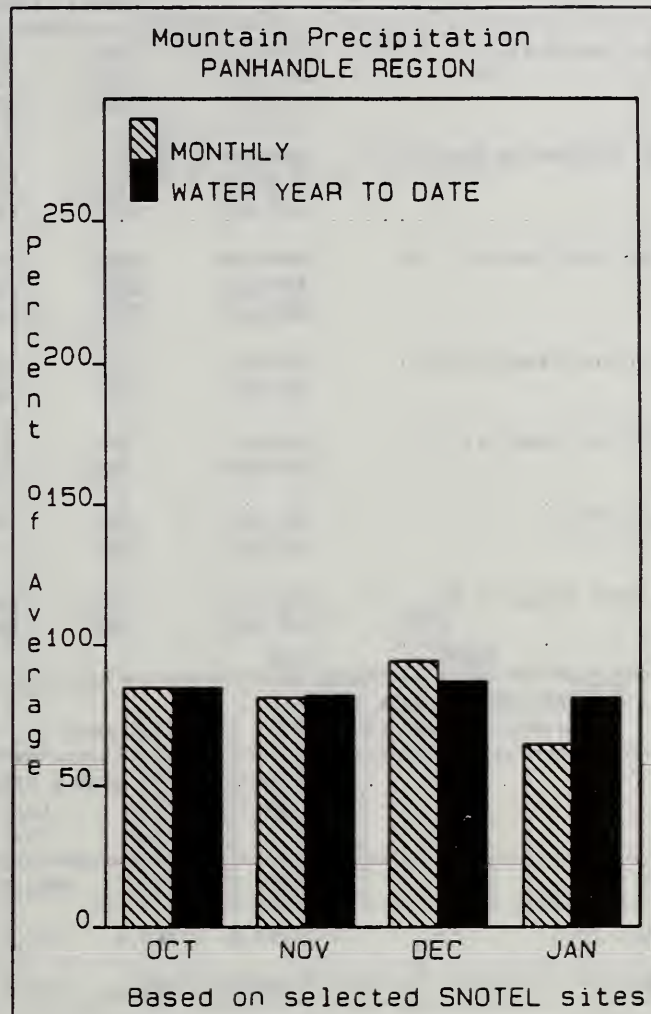
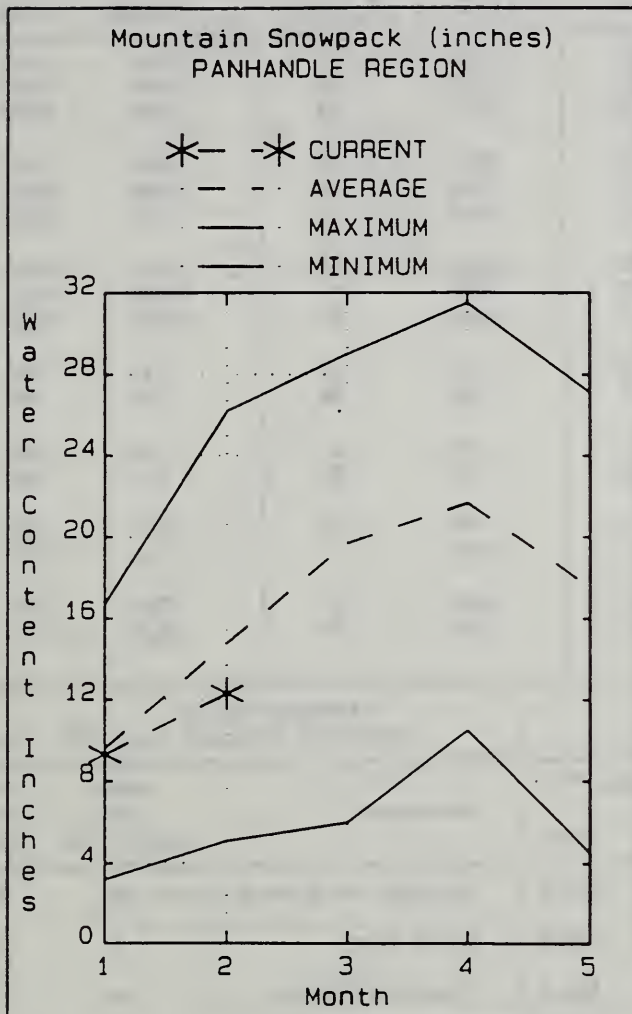
January streamflow was below to well below normal throughout Idaho as a result of continuing low soil moisture conditions and cold temperatures. Runoff was 40 to 70 percent of average throughout most of Idaho with the exception of the upper Snake River where 70 to 90 percent of average streamflow was reported. As a result, reservoirs are refilling slower than normal. Many operators have reduced outflows to bare minimums needed for protection of fisheries and other water rights. Streamflow forecasts for the coming spring and summer call for below normal flows across Idaho with the exception of the Owyhee, Bruneau, Oakley and Salmon Falls basins in the southern part of the state. Abundant snowpack in this area has produced above normal forecasts for the first time in many years.

RECREATION OUTLOOK

Idaho river enthusiasts are ecstatic about the prospect of a good runoff season in 1993 -- one of the first in six years! The snowpack is especially encouraging in the desert basins of southwestern Idaho -- the Owyhee, Jarbidge, and Bruneau rivers. The coming season promises some of the best boating seen on these rivers in years. Conditions in the Salmon basin indicate a return to more normal conditions, with the potential for high water in the spring and good flows throughout the summer months. Northern Idaho streams are expected to yield below normal runoff, but should provide adequate flows for river runners. Reservoir users should be prepared for early drawdowns once again this year. Most reservoirs in southern Idaho are very low. Much of the inflow will be passed downstream later in the summer to satisfy irrigation demands and other uses. Overall, recreational water users can look forward to a welcome change from previous dry years if precipitation patterns are favorable for the remaining two months of winter.

PANHANDLE REGION

FEBRUARY 1, 1993



WATER SUPPLY OUTLOOK

January was a very dry month in Idaho's Panhandle region. As a result, basin snowpack percentages have declined from those reported last month and currently range from 70 to 100% of average. Despite the lack of snowfall during January, the low elevations continue to report above average snowpack conditions. Streamflow prospects reflect snowpack conditions in the higher elevations, however, and have decreased from the figures reported last month. Forecasts now call for 80 to 85% of average flow for northern Idaho streams. Reservoir storage is below normal for most of the impoundments in the region. If the dry trend established in January continues for the remainder of the winter and spring, water supplies could be tight during the summer of 1993.

PANHANDLE REGION
Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
KOOTENAI at Leonia (1,2)	APR-JUN	3400	4320	4730	82	5140	6060	5701
	APR-JUL	4320	5450	5970	82	6490	7620	7199
	APR-SEP	4960	6270	6860	82	7450	8760	8275
CLARK FK at Whitehorse Rpds (1,2)	APR-JUN	5210	7220	8140	80	9060	11100	10050
	APR-JUL	6100	8470	9540	81	10600	13000	11730
	APR-SEP	6720	9320	10500	81	11700	14300	12910
PEND OREILLE LAKE inflow (1,2)	APR-JUN	5620	8100	9230	81	10400	12800	11390
	APR-JUL	6880	9510	10700	81	11900	14500	13150
	APR-SEP	7420	10300	11600	80	12900	15800	14370
PRIEST nr Priest River (1,2)	APR-JUL	385	560	650	79	735	920	814
	APR-SEP	405	605	695	80	785	985	868
COEUR D'ALENE at Enaville (1)	APR-JUL	275	535	650	84	765	1030	769
	APR-SEP	295	565	690	85	815	1080	809
ST. JOE at Calder	APR-JUL	760	895	990	84	1080	1220	1169
	APR-SEP	815	955	1050	84	1150	1290	1237
SPOKANE nr Post Falls (1,2)	APR-JUL	330	1580	2150	81	2720	3970	2627
	APR-SEP	345	1640	2230	81	2820	4120	2720

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of January

PANHANDLE REGION
Watershed Snowpack Analysis - February 1, 1993

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNGRY HORSE	3451.0	1103.0	1984.0	2362.0	Kootenai ab Bonners Ferry	24	75	73
FLATHEAD LAKE	1791.0	749.2	717.0	1095.0	Moyie River	2	88	73
NOXON RAPIDS	335.0	286.6	310.4	314.2	Clark Fork River	46	88	83
PEND OREILLE	1561.3	536.9	619.9	823.1	Priest River	4	99	88
COEUR D'ALENE	238.5	48.0	160.3	127.8	Pend Oreille River	67	91	86
PRIEST LAKE	119.3	57.0	22.5	53.4	Rathdrum Creek	5	234	138
					Hayden Lake	0	0	0
					Coeur d'Alene River	5	93	89
					St. Joe River	2	93	87
					Spokane River	12	122	103
					Palouse River	1	154	107

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

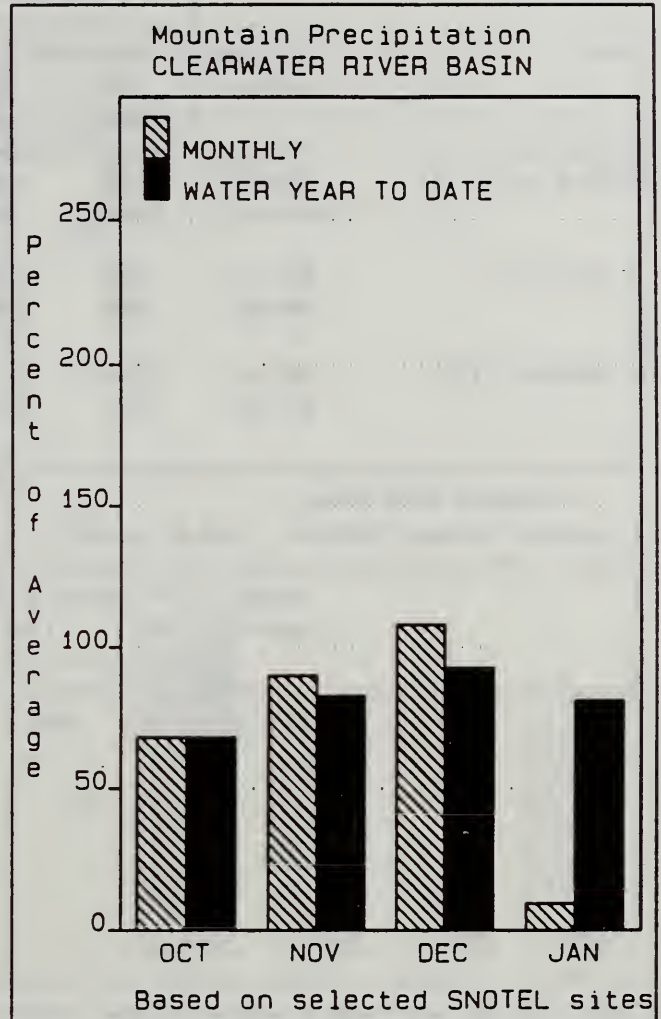
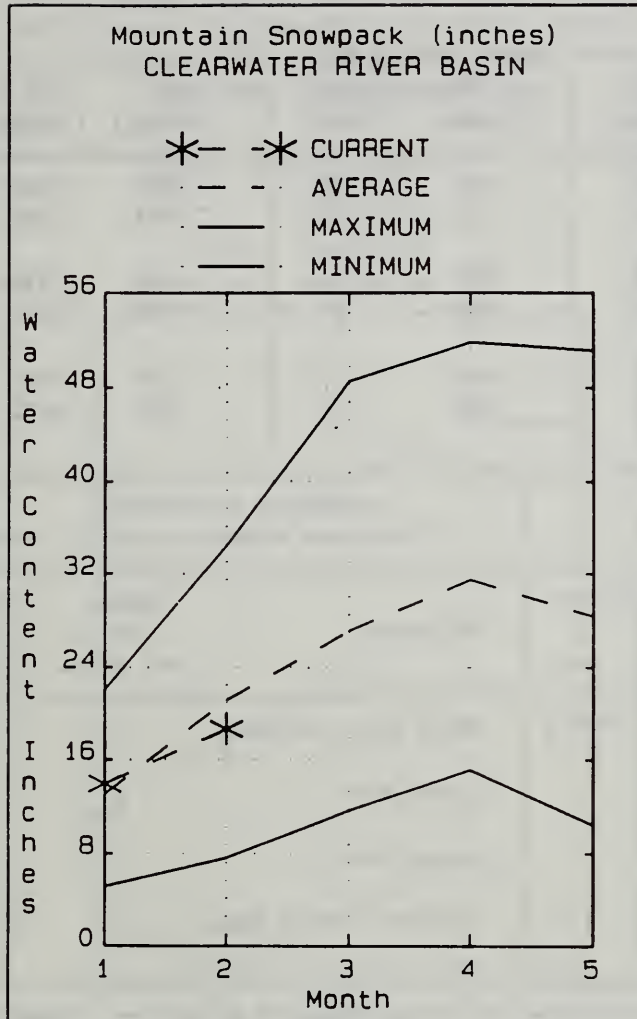
The average is computed for the 1961-1990 base period.

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(2) - The value is natural flow - actual flow may be affected by upstream water management.

CLEARWATER RIVER BASIN

FEBRUARY 1, 1993



WATER SUPPLY OUTLOOK

The Clearwater basin was the driest area in the state during January, receiving just over half its normal precipitation for the month. As a result, basin snowpack percentages decreased during January and now range from 83 to 89% of average. Streamflow forecasts have also decreased from last month and now call for 78 to 87% of average flow. Dworshak Reservoir storage is above normal for this time of year, holding 74% of its usable capacity. Water supplies could be marginal in 1993 if January's dry trend continues. Water users should monitor the situation carefully during the remainder of the snow accumulation season.

CLEARWATER RIVER BASIN
Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
DWORKSHAK RESERVOIR inflow (1)	APR-JUL	1000	1780	2140	79	2500	3280	2700
	APR-SEP	1060	1890	2270	78	2650	3480	2875
CLEARWATER at Orofino (1)	APR-JUL	2210	3420	3970	84	4520	5730	4718
	APR-SEP	2320	3600	4180	84	4760	6040	4976
CLEARWATER at Spalding (1,2)	APR-JUL	3500	5510	6440	84	7370	9420	7618
	APR-SEP	3650	5820	6800	84	7780	9950	8052

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of January

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - February 1, 1993

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
DWORKSHAK	3467.8	2563.6	2572.0	2198.2	North Fork Clearwater	12	95	86
					Lochsa River	4	91	83
					Selway River	5	97	89
					Clearwater Basin Total	20	96	87

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

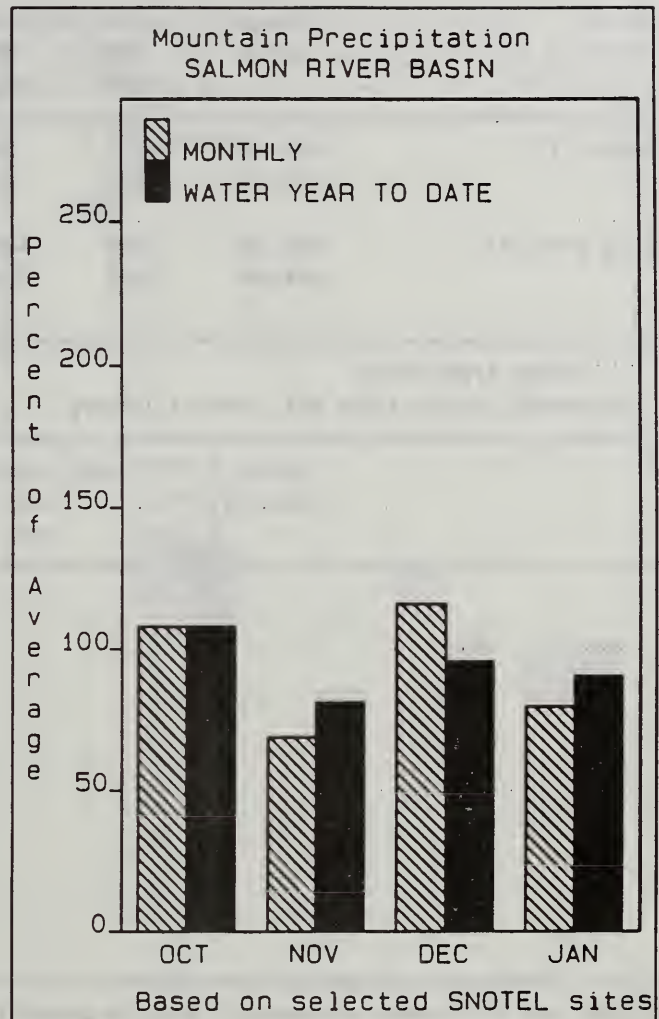
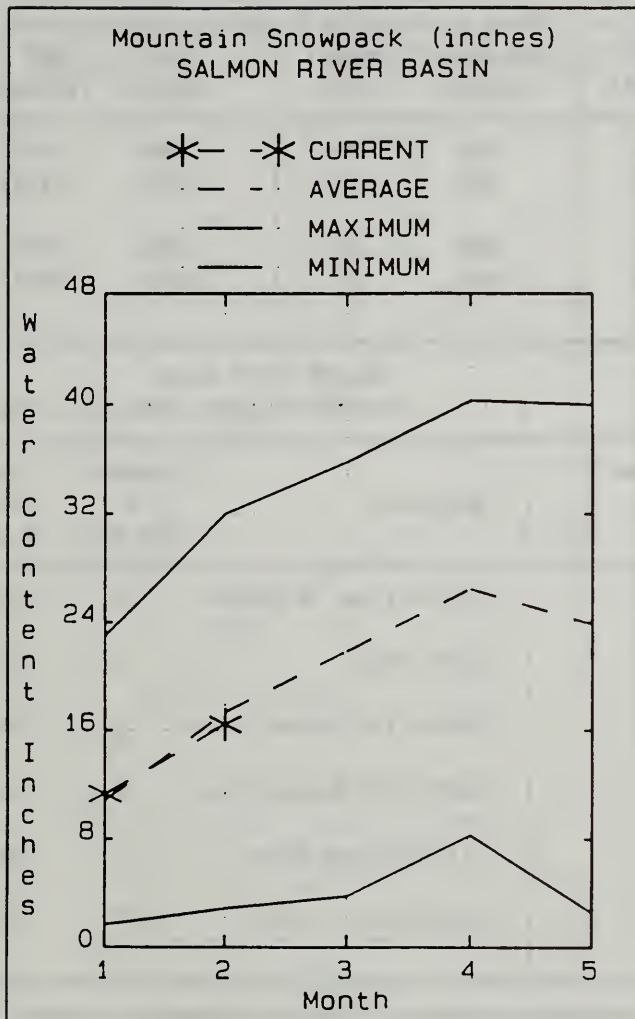
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(2) - The value is natural flow - actual flow may be affected by upstream water management.

SALMON RIVER BASIN

FEBRUARY 1, 1993



WATER SUPPLY OUTLOOK

The Salmon River basin received less than normal snowfall in January, reducing snowpack percentages slightly from those reported last month. Snowpacks are currently just above average in the western portion of the basin, trending towards below average in the east. Overall, the basin reports 95% of average snowpack. Streamflow forecasts for the April-July period call for 88% of average flows for the Salmon River at Salmon and 84% of average for the Salmon River at Whitebird. Unless weather patterns change to a drier trend during the next two months, river runners and other water users in the Salmon basin can expect one of the best runoff seasons of the last six years.

SALMON RIVER BASIN
Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
=====								
SALMON at Salmon (1)	APR-JUL	390	650	765	88	880	1140	869
	APR-SEP	455	760	895	87	1030	1330	1019
SALMON at White Bird (1)	APR-JUL	3020	4440	5080	85	5720	7150	5956
	APR-SEP	3330	4900	5610	84	6320	7890	6602

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of January

SALMON RIVER BASIN
Watershed Snowpack Analysis - February 1, 1993

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					Salmon River ab Salmon	8	137	93
					Lemhi River	4	87	76
					Middle Fork Salmon River	3	124	92
					South Fork Salmon River	3	126	99
					Little Salmon River	4	146	107
					Salmon Basin Total	23	123	95

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

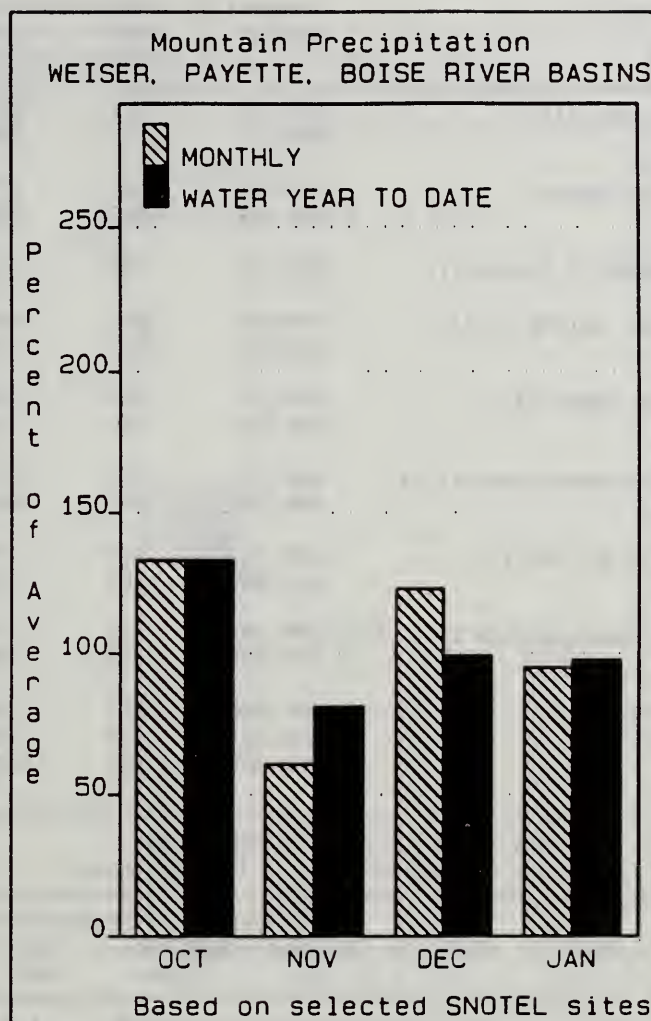
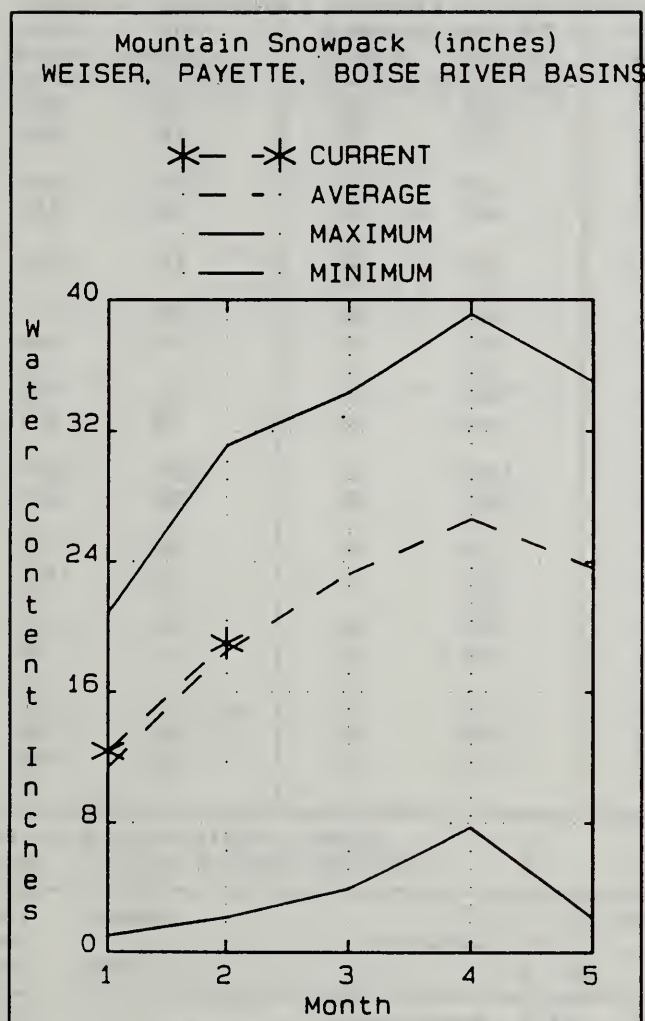
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WEISER, PAYETTE, BOISE RIVER BASINS

FEBRUARY 1, 1993



WATER SUPPLY OUTLOOK

The west central mountains were one of very few areas in the state to receive normal snowfall last month. A major storm system moved through the area in late January, dropping up to five inches of precipitation in four days. Currently, snowpacks are near average in the Boise basin and slightly above average in the Payette and Weiser basins. With one of the best snowpacks in the last six years, the west central mountains can finally expect near normal runoff for a change. The bad news is the lack of reservoir storage; combined storage for the three upper reservoirs in the Boise basin is only 19% of usable capacity. Storage in the Payette drainage is better at 45% of usable capacity. Low reservoir storage leaves water users almost totally dependent upon the mountain snowpack. The next two months will determine the final outcome of the water supply for 1993.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
WEISER nr Weiser (1)	APR-JUL	73	235	310	80	385	545	386
	APR-SEP	79	250	330	79	410	580	415
SF PAYETTE at Lowman	APR-JUL	320	375	410	94	445	500	432
	APR-SEP	360	420	460	94	500	560	488
DEADWOOD RESERVOIR inflow (1)	APR-JUL	90	113	129	94	145	169	136
NF PAYETTE at Cascade (1,2)	APR-JUL	340	445	490	98	535	640	498
	APR-SEP	355	470	520	97	570	685	533
NF PAYETTE nr Banks (2)	APR-JUL	450	550	620	95	690	790	648
	APR-SEP	475	585	660	95	735	845	690
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	970	1350	1520	93	1690	2070	1618
	APR-SEP	1090	1460	1650	94	1840	2210	1755
BOISE nr Twin Springs (1)	APR-JUL	440	550	600	95	650	760	631
	APR-SEP	485	600	650	94	700	815	686
SF BOISE at Anderson Rnch Dm (1,2)	APR-JUL	340	455	505	92	555	670	544
	APR-SEP	365	480	535	91	590	705	582
BOISE nr Boise (1,2)	APR-JUN	870	1090	1190	94	1290	1510	1264
	APR-JUL	930	1210	1330	93	1450	1730	1421
	APR-SEP	1010	1300	1430	93	1560	1850	1535

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of January

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - February 1, 1993

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MANN CREEK	11.1	1.5	1.8	5.4	Mann Creek	1	224	139
CASCADE	703.2	333.9	413.2	409.4	Weiser River	3	179	117
DEADWOOD	161.9	53.1	57.9	79.5	North Fork Payette	8	141	110
ANDERSON RANCH	464.2	15.5	75.6	300.6	South Fork Payette	4	146	97
ARROWROCK	286.6	129.3	121.4	223.9	Payette Basin Total	13	146	106
LUCKY PEAK	293.2	54.3	77.8	117.4	Middle & North Fork Boise	6	184	99
LAKE LOWELL (DEER FLAT)	177.1	50.4	64.9	131.0	South Fork Boise River	6	193	104
					Mores Creek	4	232	110
					Boise Basin Total	12	202	105
					Canyon Creek	0	0	0

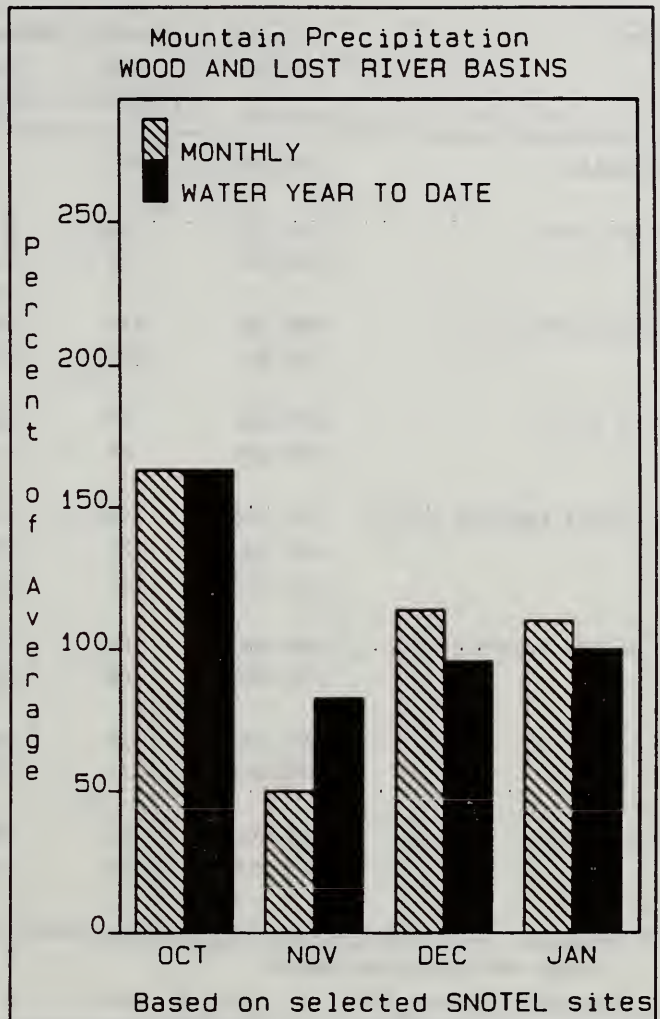
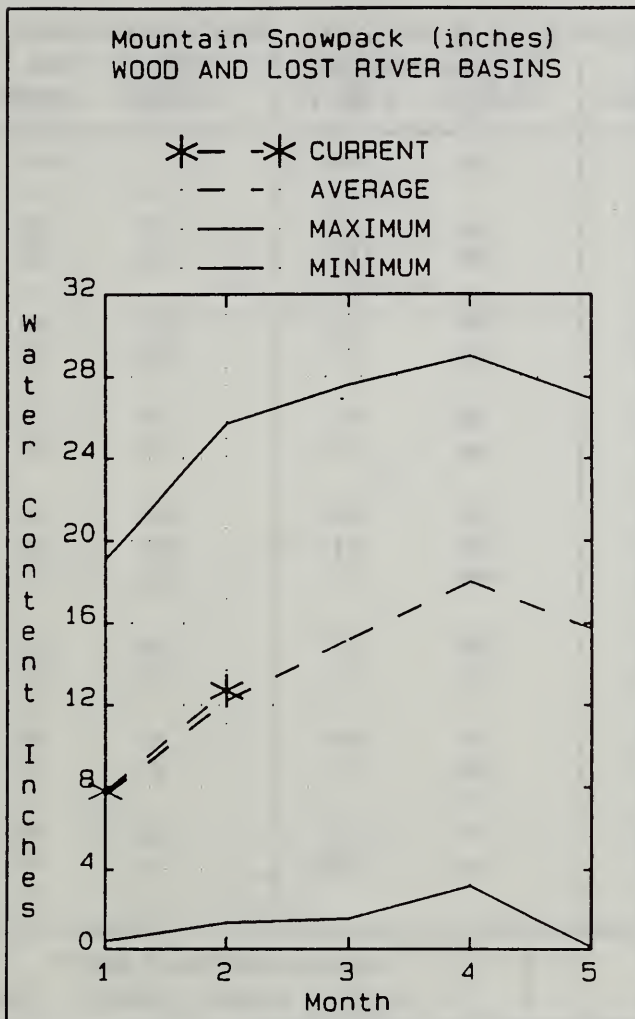
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The average is computed for the 1961-1990 base period.

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 (2) - The value is natural flow - actual flow may be affected by upstream water management.

WOOD and LOST RIVER BASINS

FEBRUARY 1, 1993



WATER SUPPLY OUTLOOK

Idaho's central mountains received more snowfall during January than any other area in the state. SNOTEL sites in the Wood and Lost River basins recorded 110% of average precipitation. Current snowpack percentages range from 101% of average for the Big Wood basin to 127% for Camas Creek, a low elevation watershed. Many sites in the basin have twice as much snow as last year at this time. Unfortunately, dry soil moisture and groundwater conditions may adversely affect the runoff yield from this year's snowpack. Current streamflow forecasts range from 77 to 100% of average runoff for streams in these basins. Reservoir storage remains extremely low with Magic reporting only 6% of usable capacity. The combination of low reservoir storage and less than average expected runoff could make water supplies tight once again this summer. Irrigators and other water users should monitor the situation closely during the remaining two months of the snow accumulation season.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		===== Chance Of Exceeding * =====						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
BIG WOOD AT HAILEY	APR-SEP	100		230	80		360	286
BIG WOOD nr Bellevue	APR-JUL	69	115	146	79	177	225	183
	APR-SEP	78	126	158	80	190	240	197
BIG WOOD bl Magic Dam (2)	APR-JUL	117	184	230	78	275	345	294
	APR-SEP	124	193	240	77	285	355	309
LITTLE WOOD nr Carey	APR-JUL	51	70	83	90	96	115	92
	APR-SEP	56	76	89	89	103	122	99
BIG LOST at Howell Ranch nr Chilly	APR-JUN	97	118	132	93	146	167	141
	APR-JUL	121	150	170	93	190	220	181
	APR-SEP	137	168	190	92	210	245	206
BIG LOST bl Mackay Reservoir (2)	APR-JUL	82	110	128	85	146	174	150
	APR-SEP	86	135	155	85	175	225	182
LITTLE LOST bl Wet Ck	APR-JUL	23	28	31	100	34	39	31
	APR-SEP	27	34	38	97	43	49	39
LITTLE LOST nr Howe	APR-JUL	25	28	31	93	34	38	33
	APR-SEP	31	37	40	93	44	49	43

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of January

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - February 1, 1993

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MAGIC	191.5	11.8	19.1	92.8	Big Wood ab Magic	8	163	101
LITTLE WOOD	30.0	9.8	12.1	15.5	Camas Creek	2	298	127
MACKAY	44.4	20.6	21.7	30.0	Big Wood Basin Total	10	179	105
					Little Wood River	3	181	121
					Fish Creek	0	0	0
					Big Lost River	5	160	109
					Little Lost River	3	139	104

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

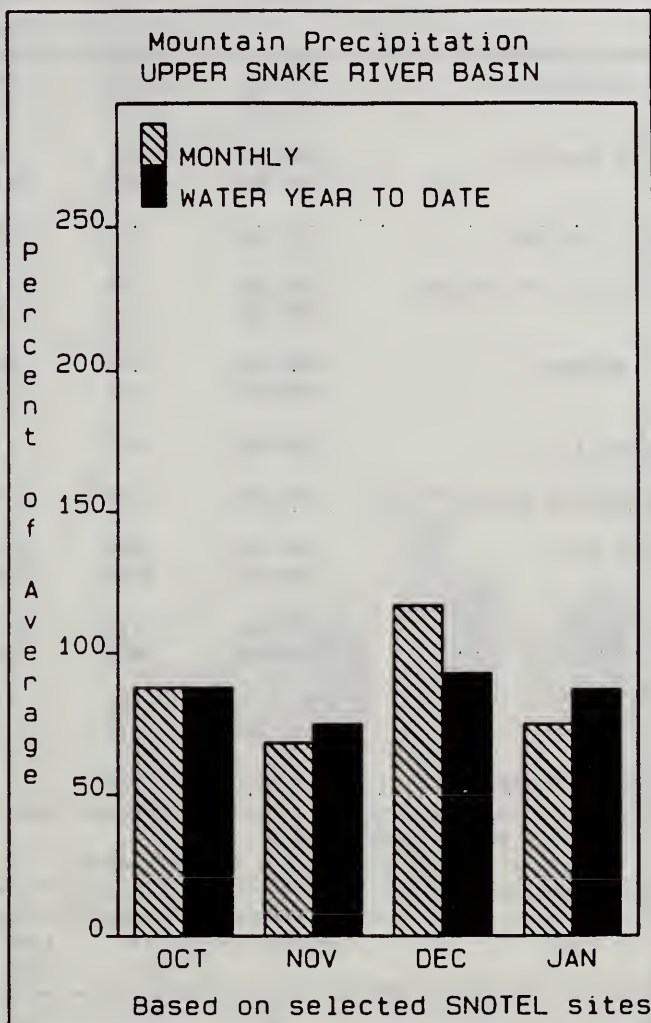
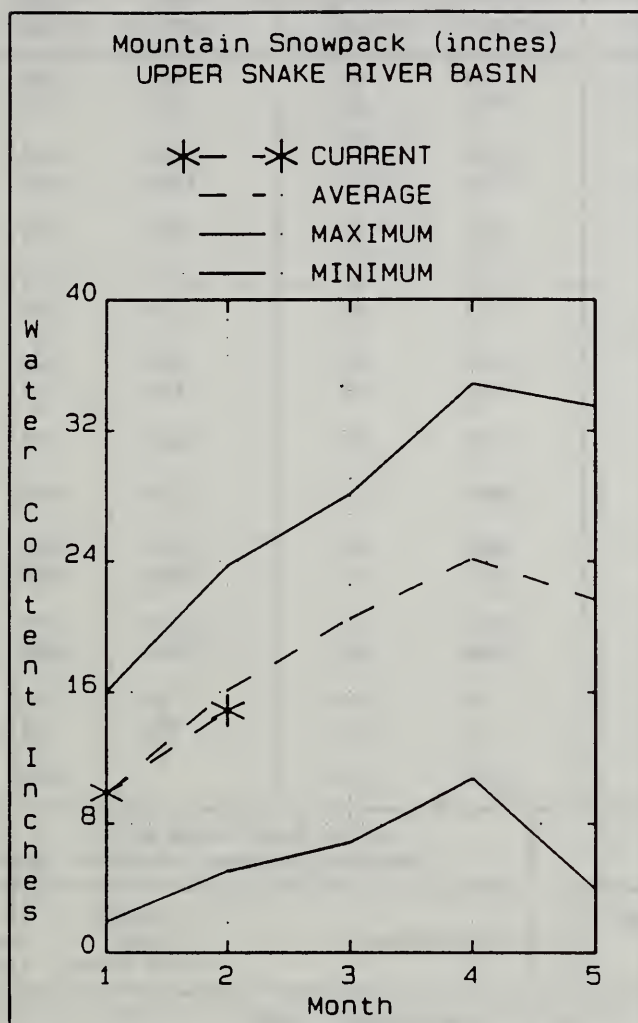
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UPPER SNAKE RIVER BASIN

FEBRUARY 1, 1993



WATER SUPPLY OUTLOOK

January was another dry month in the upper Snake basin with SNOTEL sites recording only 75% of normal precipitation. This brings the water year precipitation down to 87% of average for the basin. Snowpack conditions vary widely across the basin and range from 76% of average in the Greys River to 1181% in the Portneuf basin, a low elevation watershed. Overall, the snowpack above American Falls Reservoir is 93% of average. As a result of dry January conditions, streamflow forecasts have dropped from the figures reported last month and call for below average runoff for all streams in the area. Reservoir storage is very low: eight major reservoirs are reporting a combined storage of only 37% of usable capacity -- slightly over half of the normal storage for this time of year. The remaining two months of the snow accumulation season could make or break the water supply for Snake River water users. All interested parties should monitor the situation closely and keep in touch with their local irrigation districts for more specific information.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - February 1, 1993

		<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
HENRYS FORK nr Ashton	APR-JUL	355	410	450	82	490	545	544
	APR-SEP	495	560	605	82	650	715	730
HENRYS FORK nr Rexburg	APR-JUL	745	895	995	81	1100	1240	1228
	APR-SEP	900	1130	1250	80	1370	1600	1551
FALLS RIVER nr Squirrel	APR-JUL	240	295	320	87	345	400	364
TETON ab S Leigh Ck nr Driggs	APR-JUL	89	115	133	86	151	177	153
	APR-SEP	120	151	173	86	195	225	199
TETON nr St. Anthony	APR-JUL	240	300	340	90	380	440	375
	APR-SEP	285	355	400	88	445	515	454
SNAKE nr Moran (1,2)	APR-SEP	575	715	775	89	835	975	869
PALISADES RESERVOIR inflow (1,2)	APR-SEP	2030	2770	3090	82	3410	4140	3763
SNAKE nr Heise (2)	APR-JUL	1850	2430	2830	82	3230	3810	3451
	APR-SEP	2180	2860	3330	82	3800	4480	4049
SNAKE nr Blackfoot (1,2)	APR-JUL	2710	3290	3710	83	4130	4710	4444
	APR-SEP	2850	4010	4530	82	5050	6210	5482
PORTNEUF at Topaz	MAR-JUL	56	69	78	90	87	100	86
	MAR-SEP	70	86	97	90	108	124	107
AMERICAN FALLS RESV INFLOW	APR-JUL	735		2130	69		3530	3066

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of January

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - February 1, 1993

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HENRYS LAKE	90.4	57.9	82.0	78.7	Camas-Beaver Creeks	4	191	131
ISLAND PARK	135.2	69.1	94.7	100.7	Henry's Fork River	10	135	105
GRASSY LAKE	15.2	12.7	12.1	10.8	Teton River	8	146	102
JACKSON LAKE	847.0	153.6	641.7	479.6	SNAKE above Jackson Lake	10	134	90
PALISADES	1355.5	423.4	838.6	1016.0	Gros Ventre River	4	134	87
RIRIE	96.5	27.5	47.0	48.5	Hoback River	6	143	80
BLACKFOOT	348.7	44.0	103.0	235.8	Greys River	5	127	76
AMERICAN FALLS	1672.6	909.9	1053.6	1141.5	Salt River	5	126	82
					SNAKE above Palisades	32	133	87
					Willow Creek	7	194	116
					Blackfoot River	4	173	93
					Portneuf River	5	280	118
					SNAKE abv American Falls	45	149	93

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

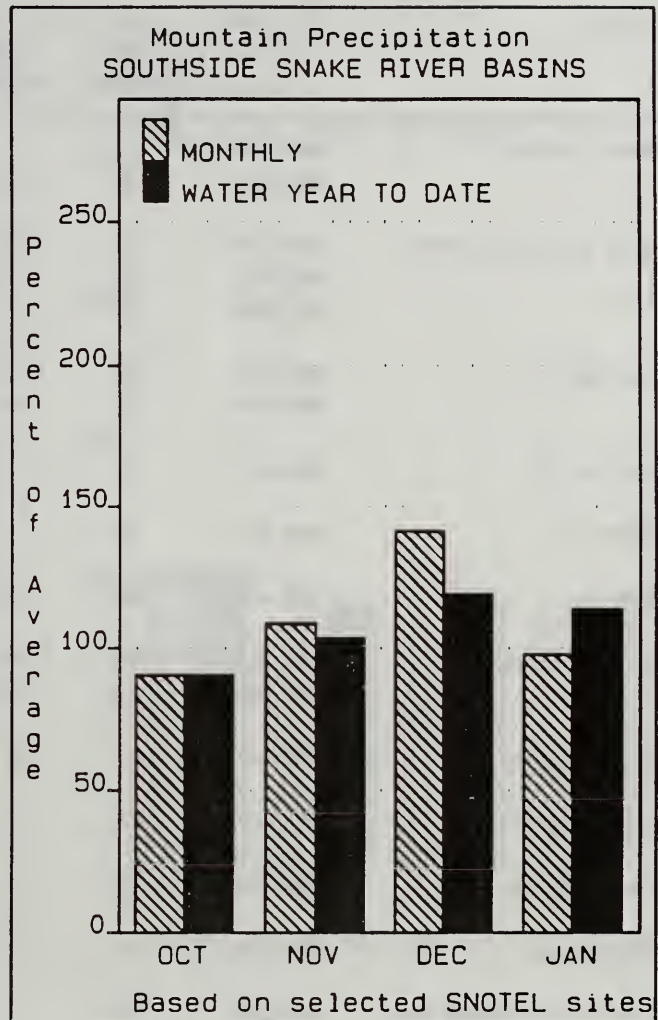
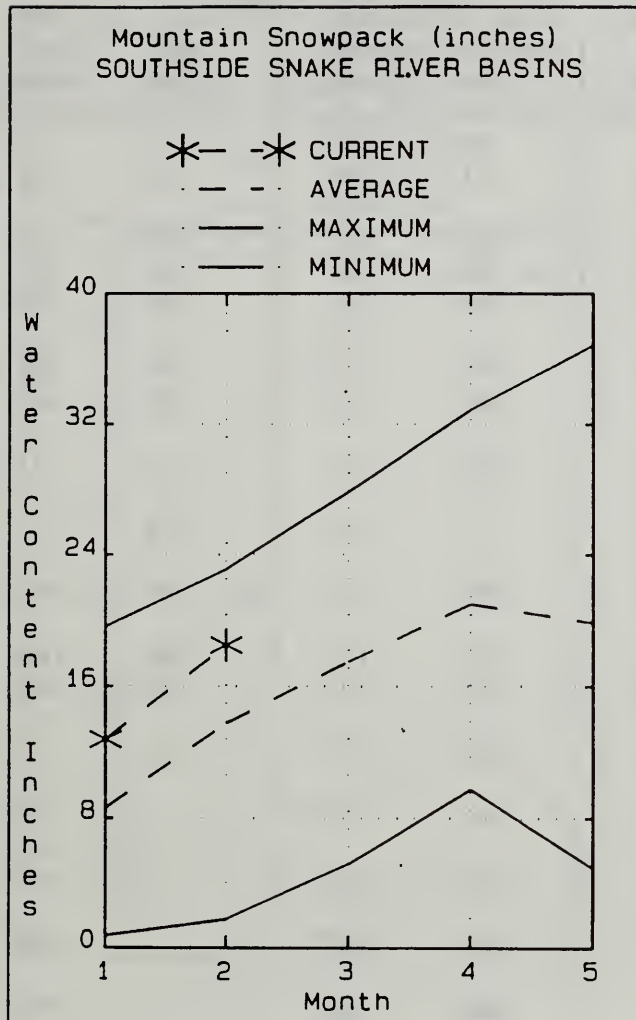
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS

FEBRUARY 1, 1993



WATER SUPPLY OUTLOOK

Watersheds south of the Snake River were blessed with normal precipitation during January. Mountain precipitation now stands at 114% of average for the water year -- the highest in the state. The area also reports the best snowpack in the state -- a definite change from previous years. Currently, snowpacks range from near average conditions above Oakley Reservoir to 172% of average in the Owyhee basin. Streamflow forecasts reflect these positive snowpack figures and range from 110% of average for the Oakley Reservoir inflow to 117% for the Bruneau River. All water users are acutely aware, however, of the nearly empty reservoirs in the basin. Oakley, Salmon Falls, Wildhorse, and Owyhee reservoirs are all reporting 10% or less of their usable capacity. Two more months of good snowfall are still needed to ensure a promising water supply for basins south of the Snake River.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
OAKLEY RESERVOIR inflow	MAR-JUL			38	111			34
	MAR-SEP	28	35	41	110	48	56	37
SALMON FALLS CK nr San Jacinto	MAR-JUN	61	82	97	112	112	133	86
	MAR-JUL	63	87	103	113	119	143	91
	MAR-SEP	66	91	108	112	125	150	96
BRUNEAU nr Hot Spring	MAR-JUL	180	235	275	117	315	370	235
	MAR-SEP	177	245	285	115	325	390	246
OWYHEE nr Gold Ck (2)	MAR-JUL	21	32	39	111	46	57	35
OWYHEE nr Owyhee (2)	APR-JUL	50	77	95	110	113	140	86
OWYHEE nr Rome	FEB-JUL	380	560	685	110	810	990	622
OWYHEE RESERVOIR inflow (1,2)	FEB-JUL	315	605	735	112	865	1160	656
	APR-SEP	19.0	330	470	112	610	920	418
SUCCOR CK nr Jordan Valley	FEB-JUL	6.1	13.2	18.0	111	23	30	16.2
SNAKE RIVER at King Hill	APR-JUL	375		1560	53		2750	2896
SNAKE RIVER near Murphy	APR-JUL	415		1650	55		2890	2980
SNAKE RIVER at Weiser	APR-JUL	385		3210	58		6070	5465
SNAKE RIVER at Hells Canyon Dam	APR-JUL	860		3890	63		6930	6129

SOUTHSIDE SNAKE RIVER BASINS Reservoir Storage (1000 AF) - End of January					SOUTHSIDE SNAKE RIVER BASINS Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
OAKLEY	77.4	8.1	8.8	26.5	Raft River	1	205	132
SALMON FALLS	182.6	13.9	14.6	49.3	Goose-Trapper Creeks	1	176	95
WILDHORSE RESERVOIR	71.5	4.7	7.4	31.5	Salmon Falls Creek	5	161	127
OWYHEE	715.0	59.9	112.9	464.0	Bruneau River	8	230	131
BROWNLEE	1419.3	798.5	857.5	665.4	Owyhee Basin Total	19	459	172

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

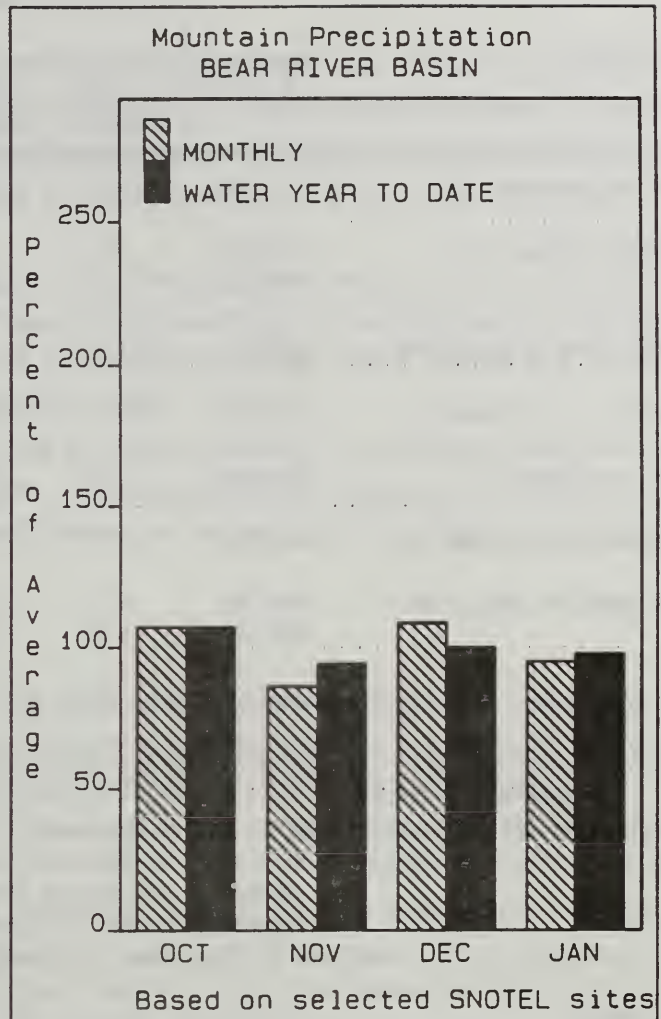
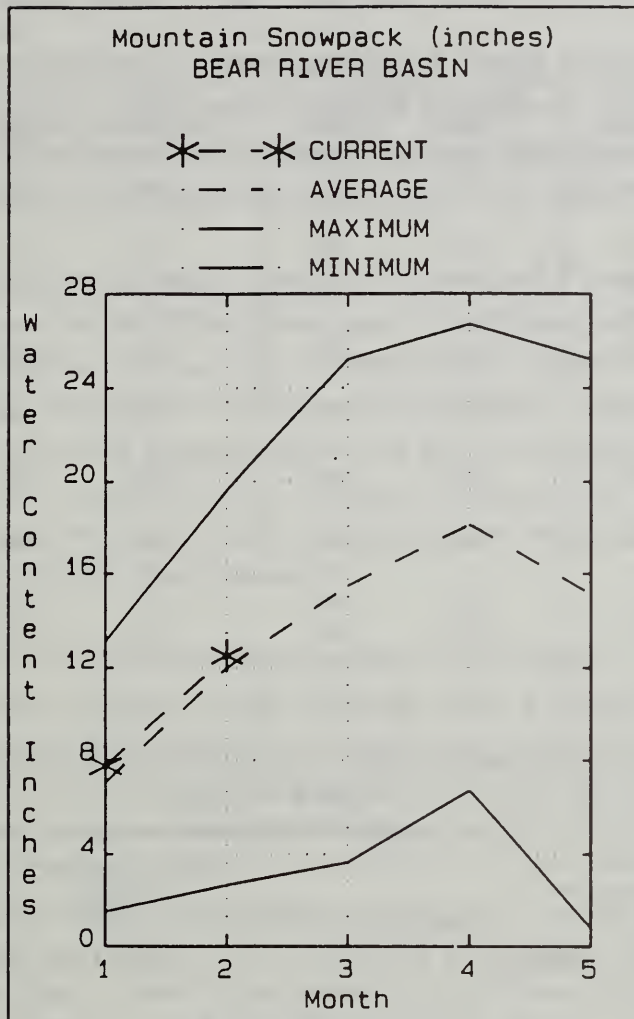
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

BEAR RIVER BASIN

FEBRUARY 1, 1993



WATER SUPPLY OUTLOOK

January's precipitation in the Bear River area was slightly below normal, bringing the water year total to 98% of average. The snowpack is much better than last year at this time, but is still only normal in the Bear River and its tributaries. Streamflow forecasts call for below normal runoff for yet another year, and reservoirs are very low from previous dry years. Bear Lake and Montpelier Creek reservoirs are both holding less than 25% of their usable capacity. Water users in the area should be prepared for below normal water supplies due to the low snowpack conditions and extremely low reservoir levels.

BEAR RIVER BASIN
Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
BEAR RIVER nr Randolph	APR-JUL	9.0	69	110	84	151	210	131
SMITHS FORK nr Border, WY	APR-JUL	55	73	86	84	99	117	102
	APR-SEP	61	82	97	82	112	133	118
THOMAS FORK nr Wy-Id Stateline	APR-JUL	11.0	20	26	79	32	41	33
THOMAS FORK nr WY-ID Stateline	APR-SEP	10.0	20	26	72	33	42	36
BEAR RIVER near Harer	APR-SEP	98	210	285	83	360	470	345
BEAR RIVER blw Stewart Dam (2)	APR-SEP	132	199	245	82	290	360	298
MONTPELIER CREEK nr Montpelier	APR-JUL	5.2	8.3	10.4	85	12.5	15.6	12.2
	APR-SEP	5.9	9.5	11.9	84	14.3	17.9	14.2
CUB RIVER nr Preston	APR-JUL	27	35	41	87	47	55	47

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of January					BEAR RIVER BASIN Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
WOODRUFF NARROWS	57.3	5.0	27.0	---	Smiths & Thomas Forks	4	120	86
WOODRUFF CREEK	4.0	1.9	2.4	---	Bear River ab WY-ID line	8	157	99
BEAR LAKE	1421.0	215.5	466.7	987.6	Montpelier Creek	2	136	83
MONTPELIER CREEK	4.0	0.9	1.0	1.6	Mink Creek	1	211	93
					Cub River	1	188	107
					Bear River ab ID-UT line	13	155	96
					Mated River	1	296	112

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

Interpreting Streamflow Forecasts

Introduction

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations. There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value. There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value. There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

10 Percent Chance of Exceeding Forecast. There is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts—an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Deeth between March 1 and July 31.

Using the Higher Exceedance Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

UPPER HUMBOLDT RIVER BASIN								
STREAMFLOW FORECASTS								
FORECAST POINT	FORECAST PERIOD	<-----DRIER----- FUTURE CONDITIONS -----WETTER----->						
		----- Chance of Exceeding -----						
		90%	70%	50% (Most Probable)	30%	10%	25 YR.	
		(1000AF)	(1000AF)	(1000AF) (% AVG.)	(1000AF)	(1000AF)	(1000AF)	
MARY'S RIVER nr Deeth	MAR-JUL	5.0	20.0	36	77	52	76	47
	APR-JUL	8.0	17.0	31	74	45	67	42
LAMOILLE CREEK nr Lamoille	MAR-JUL	6.0	16.0	24	79	32	43	31
	APR-JUL	4.0	15.0	22	75	30	41	30
NF HUMBOLDT RIVER at Devils Gate	MAR-JUL	6.0	12.0	43	73	74	121	59






For more information concerning streamflow forecasting ask your local SCS field office for a copy of "A Field Office Guide for Interpreting Steamflow Forecasts".

IDAHO MOUNTAIN SNOWPACK

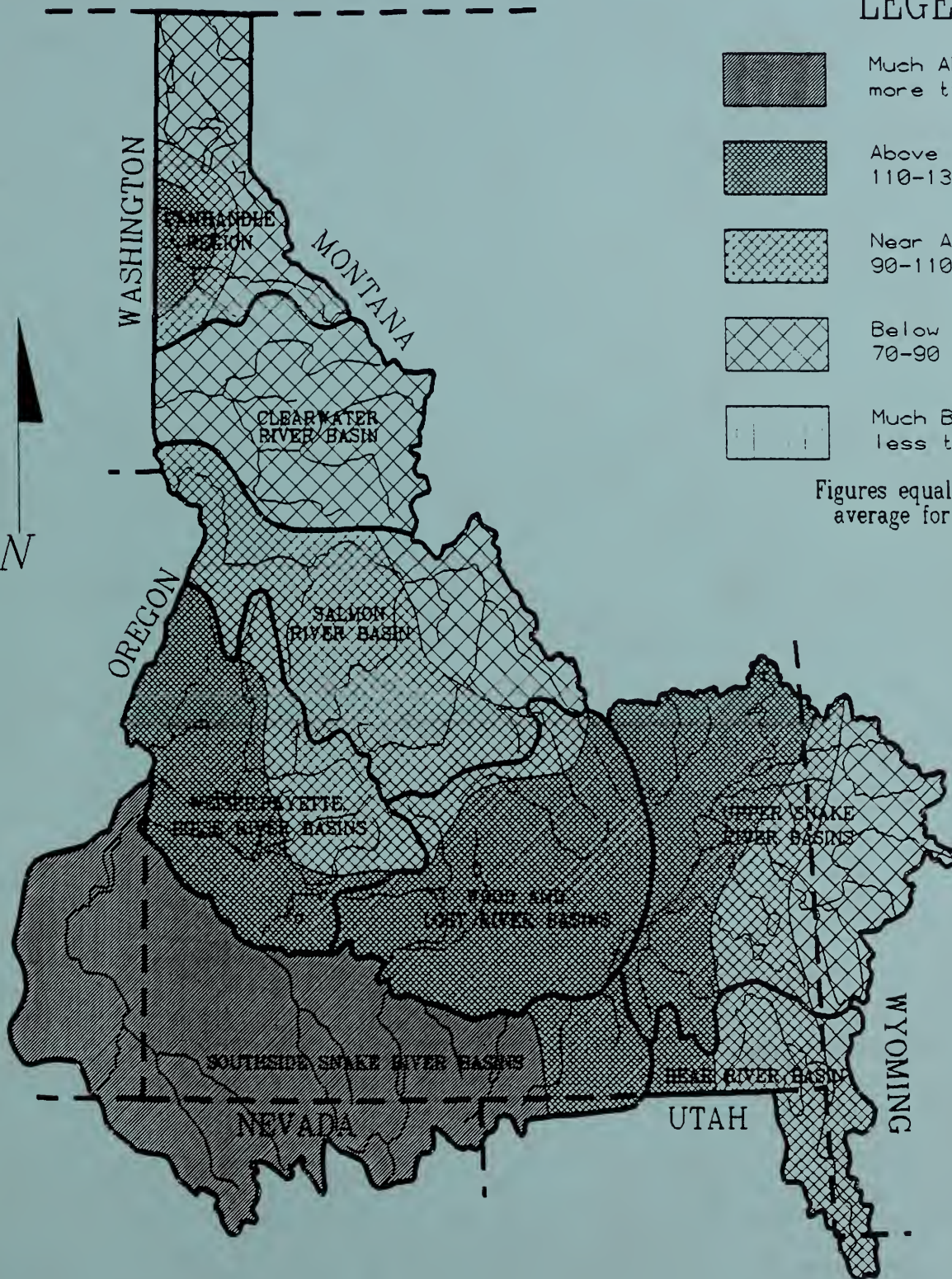
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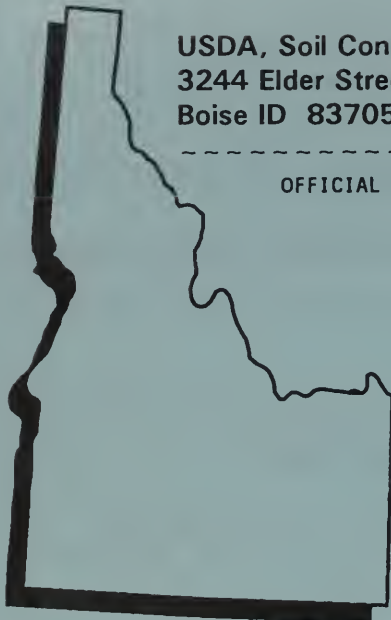
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LEGEND

	Much Above Average more than 130 percent
	Above Average 110-130 percent
	Near Average 90-110 percent
	Below Average 70-90 percent
	Much Below Average less than 70 percent

Figures equal percent of
average for drainage.

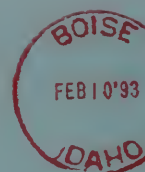




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In addition to basin outlook reports, a Water Supply Forecast for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 248, Portland, OR 97209-3489.